

REMARKS***Summary of the Amendment***

Upon entry of the above amendment, 1, 6, 7, 15, 17, and 23 will have been amended. Accordingly, claims 1 - 28 currently remain pending.

Summary of the Official Action

In the instant Office Action, the Examiner has indicated that claims 6 and 7 contain allowable subject matter and would be allowable if presented in independent forms that include the feature of their base claims and to overcome the formal rejections. The Examiner has also rejected claims 6 - 8 and 15 - 28 based upon formal matters, and has rejected claims 1 - 5 and 8 - 28 over the art of record. By the present amendment and remarks, Applicant submits that the objections and rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

Interview with Examiner Halpern

Applicant gratefully acknowledges the courtesy extended to his representative by Examiner Halpern in conducting a personal interview on July 1, 2003. In the interview, the it was agreed that the independent claims would be amended to even more clearly recite that the base body is coupled to the wear-resistant surface, i.e., the wear-resistant surface is not a part or surface of the base body. Moreover, the record was clarified that claim 8, which depends from objected claim 6, should have been indicated as containing allowable subject

matter.

Acknowledgment of Allowable Subject Matter

Applicant gratefully acknowledges the Examiner's indication that claims 6 - 8 contain allowable subject matter and would be allowable if presented in independent forms that include the features of their respective base claims and that overcome the formal rejections.

By the present amendment, claim 6 has been presented in independent form and also includes an amendment to address a minor formal matter. However, Applicant notes that the instant amendment to claim 6 is intended to address and overcome the formal matter without narrowing the scope of original claim 6. Therefore, no estoppel should be deemed to attach.

Further, claim 7 has likewise been amended to address a formal matter that does not affect the scope of the claim.

Accordingly, Applicant requests that the Examiner reconsider and withdraw the objection to claims 6 - 8 and indicate that these claims are allowable.

Traversal of Rejection Under 35 U.S.C. § 112, Second Paragraph

Applicant traverses the rejection of claims 6 - 8 and 15 - 28 under 35 U.S.C. § 112, second paragraph, as being indefinite. By the present amendment, Applicant has revised claims 6, 7, 15, and 23 to address and overcome the formal matters noted by the Examiner. Moreover, claim 17 has been amended to address an informality noted in reviewing the pending claims.

Accordingly, Applicant requests the Examiner reconsider and withdraw the formal rejections under 35 U.S.C. § 112, second paragraph, and indicate that these claims are fully in compliance with the requirements of the statute.

Traversal of Rejection Under 35 U.S.C. § 102(b)

Applicant traverses the rejection of claims 1, 2, 8, 15, 16, and 18, and 21 under 35 U.S.C. § 102(b) as being anticipated by SOHMA (U.S. Patent No. 3,304,056) [identified by the Examiner as “AKIO”]. The Examiner asserts that SOHMA discloses a turbine blade having the back of an anti-wear stellite plate soldered to a leading front surface of the blade. The Examiner further asserts that the stellite plate forms a base body in the context of the instant claims. Applicant traverses the Examiner’s assertions.

As noted above, the Examiner acknowledged in the July 1, 2003 interview that claim 8 was inadvertently identified as rejected, when, in fact, claim 8 contains allowable subject matter. Accordingly, Applicant submits that the rejection of claim 8 is moot.

Applicant’s independent claim 1, as now amended, recites, *inter alia*, an anti-wear element comprising a *base body coupled to at least one wear-resistant surface*, and said anti-wear element being coupled to said leading front surface. Further, Applicant’s independent claim 15, as now amended, recites, *inter alia*, *at least one wear-resistant working surface coupled to said base body*, wherein said back side is formed to correspond to a shape of, and to be coupled to, the leading front edge. Applicant submits that SOHMA fails to anticipate

at least the above-noted features.

SOHMA discloses a blade, albeit a turbine blade for nuclear reactors or generating subterranean heat, having a stellite plate 1 attached within a blade recess 6 of turbine blade 2. According to SOHMA, stellite plate 1 is fixed in recess 6 by soldering and arranged so that water droplets are separated and directed toward the blade tip. Applicant notes that the Examiner is construing stellite plate 1 of SOHMA as being formed by a base body having a wear resistant surface.

However, Applicant notes that this construction is contrary to the explicitly recited features of the instant invention. In particular, Applicant notes that SOHMA fails to disclose that stellite plate 1 is composed of a base body *coupled to* at least one wear-resistant surface, as recited in at least independent claims 1 and 15 (in terms of claim 1). Thus, while stellite plate 1 of SOHMA is composed of an element formed from a wear resistant material, Applicant's claims recite an anti-wear element comprising a wear resistant surface *coupled to* a base body, and the anti-wear element is coupled to the leading front edge of the rotor blade, as recited in terms of claim 1.

Thus, Applicant notes that SOHMA fails to disclose the various separately recited elements of at least Applicant's independent claims 1 and 15, as now amended, but only discloses a single anti-wear element formed by a wear resistant surface. That is, SOHMA fails to disclose an anti-wear element comprising a wear resistant surface *coupled to* a base

body, as recited in Applicant's claims.

Moreover, Applicant notes that, in contrast to the instant invention, the surface of stellite plate 1, when stellite plate is located in the recess in the rotor blades, forms the leading surface of the rotor blades. Thus, Applicant submits that, as SOHMA discloses that stellite plate 1 is soldered in a recess in the turbine blade, this document certainly fails to disclose that plate 1 is coupled to a leading front surface of the turbine blade 2, as is recited in at least independent claim 1. Further, Applicant notes that, for the foregoing reasons, because a recess is provided so that stellite plate 1 will form the leading edge of the rotors, SOHMA fails to disclose that the back side of the base body is formed to correspond to the shape of the leading front edge, as recited in at least independent claim 15.

Because SOHMA fails to disclose each and every recited element of at least independent claims 1 and 15, as now amended, Applicant submits that SOHMA fails to establish an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b), such that this document cannot anticipate the instant invention. Therefore, Applicant submits that the instant rejection is improper and should be withdrawn.

Further, Applicant submits that claims 2, 10, 16, 18, and 21 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that SOHMA fails to anticipate, *inter alia*, said anti-wear element is welded to said

leading front surface, as recited in claim 2; said back side is welded to said leading front edge, as recited in claim 16; said wear-resistant working surface comprises a wear-resistant material, as recited in claim 18; and said wear-resistant working surface is welded to said base body and said wear-resistant surface is arranged to form at least one front edge that extends over an edge of said base body opposite said back side, as recited in claim 21.

Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1, 2, 15, 16, 18, and 21 under 35 U.S.C. § 102(b) and indicate that the claims are allowable.

Traversal of Rejection Under 35 U.S.C. § 103(a)

1. Over Sohma

Applicant traverses the rejection of claims 19 and 22 under 35 U.S.C. § 103(a) as being unpatentable over SOHMA. The Examiner asserts that it would have been obvious to modify SOHMA to utilize a wear resistant material comprising a non-rusting, alloyed high-grade steel. Applicant traverses the Examiner's assertions.

As discussed above, SOHMA merely teaches forming an anti-wear element from a wear resistant material, and fails to provide any teaching or suggestion of forming such an element from a base body coupled to a wear resistant surface, as recited in at least independent claim 15, as now amended.

Further, Applicant notes that, as the leading edge of SOHMA is formed by the anti-wear element positioned in a recess in the rotor blade, there is no teaching or suggestion of

a back side of the base body formed to correspond to a shape of the leading front edge. That is, because the element itself forms the leading edge, Applicant submits that this document cannot even arguably suggest that the anti-wear element has a base with a back side formed to correspond to the leading edge, as recited in at least independent claim 15.

Further, Applicant submits that claims 19 and 22 are allowable at least for the reason that these claims depend from an allowable base claim and because they recite additional features that further defines the present invention. In particular, Applicant submits that no proper combination of SOHMA and STOFFER teaches or suggests, *inter alia*, said wear-resistant material comprises a non-rusting, alloyed high-grade steel, as recited in claim 19; and a curvature radius of said front edge is a maximum of approximately 2 mm, as recited in claim 21.

Applicant requests that the Examiner reconsider and withdraw the rejection of claims 19 and 21 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

2. Over Sohma in view of Stoffer

Applicant traverses the rejection of claims 9 - 14 and 20 under 35 U.S.C. § 103(a) as being unpatentable over SOHMA in view of STOFFER (U.S. Patent No. 3,365,126). The Examiner asserts that, while SOHMA fails to show the leading front edge is completely covered by an antiwear element, it would have been obvious to do so in view of the teachings of STOFFER. Applicant traverses the Examiner's assertions.

Applicant notes that, STOFFER is directed to reducing erosion due to rain, ice, dust, hail, salt spray, etc., in blades of a high speed aircraft compressors. To reduce the impact angle of rain drops or other foreign particles striking the compressor blade, serrations 18, in the form of a cone, are formed to extend from (18 and 32) and into (36) compressor blade 10, *see* Figure 4. In the alternative embodiment of Figure 5, STOFFER shows a serrated leading edge of compressor blade 10 extending through a metallic cap. However, as illustrated, the metallic cap appears to be applied within a recess in the leading edge of compressor blade 10, which would enable the aerodynamic properties of the compressor blade to be preserved.

As such, Applicant notes that STOFFER, like SOHMA above, fails to teach or suggest an anti-wear element formed by a base body *coupled to* at least one wear resistant surface, as recited in at least independent claims 1 and 15 (in terms of claim 1). Because neither document teaches or suggests at least the above-noted feature, Applicant submits that no proper combination of the applied documents can render unpatentable the combination of features recited in at least independent claims 1 and 15.

Moreover, Applicant notes that the art of record fails to provide the necessary motivation or rationale for combining the art of record in the manner set forth by the Examiner. In this regard, Applicant notes that, as SOHMA is directed to a turbine blade for nuclear reactors or subterranean heat generators, in which the blades are not exposed to

environmental factors such as rain, ice, dust, hail, salt spray, it would not have been obvious to one ordinarily skilled in the art to modify the blades of SOHMA to include a protective covering to prevent rain, ice, dust, hail, and salt spray damage, as taught by STOFFER. In other words, as the blades of SOHMA and STOFFER are specially designed for operation in wholly distinct environments, it would not have been apparent to modify the blades of SOHMA in accordance with the disclosed teachings of STOFFER.

Thus, Applicant submits that the art of record fails to provide the necessary motivation or rationale for combining SOHMA and STOFFER in the manner asserted by the Examiner, and that the only reason for combining the documents in the manner asserted by the Examiner is the application of improper hindsight after reviewing Applicant's disclosure.

Further, Applicant submits that claims 9 - 14 and 21 are allowable at least for the reason that these claims depend from an allowable base claim and because they recite additional features that further defines the present invention. In particular, Applicant submits that no proper combination of SOHMA and STOFFER teaches or suggests, *inter alia*, said at least one rotor blade comprises a plurality of rotor blade having leading front surfaces, and at least one partial section of each said leading front surface of each rotor blade, radially inwardly from a free end, is completely covered by said anti-wear element, as recited in claim 9; a portion of said anti-wear element coupled to said at least one rotor blade protrudes past said leading front surface, as recited in claim 10; said portion extends past said leading front

surface in a direction adapted to face a screen in a paper stock processing machine, as recited in claim 11; a face of said anti-wear element is beveled at an angle α of between approximately 1° and 45° from parallel to a rotational axis of said rotor, as recited in claim 12; said face of said anti-wear element is beveled such that a radial distance of a surface of said face from said rotational axis increases in a direction toward said leading front surface, as recited in claim 13; said leading front surface has one of a cylindrical and conical ring segment shape, as recited in claim 14; and said wear-resistant working surface is welded to said base body and said wear-resistant surface is arranged to form at least one front edge that extends over an edge of said base body opposite said back side, as recited in claim 21.

Applicant requests that the Examiner reconsider and withdraw the rejection of claim 9 - 14 and 21 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

2. Over Mannes in view of Sohma

Applicant traverses the rejection of claims 3 - 5, 17, and 23 - 28 under 35 U.S.C. § 103(a) as being unpatentable over MANNES (U.S. Patent No. 5,509,536) in view of SOHMA. The Examiner asserts that, while MANNES fails to teach a leading front surface of a rotor blade protected by a wear resistant element, it would have been obvious to include such an element in view of the teachings of SOHMA. Applicant traverses the Examiner's assertions.

Applicant's independent claim 23 recites, *inter alia*, a rotor rotatably coupled adjacent

said screen, said rotor comprising at least one rotor blade having a leading front surface, relative to a rotational direction of said rotor, and an anti-wear element coupled to said leading front surface, and *said anti-wear element comprising a base body coupled to a wear-resistant working surface*. Applicant submits that no proper combination of the applied documents teaches or suggests the above-noted features of independent claim 23, or the above-discussed features of independent claims 1 and 15.

Applicant notes that MANNES is directed to an apparatus and method for sorting fiber suspension, and, therefore, that this document, in contrast to SOHMA, discloses a rotor that is at least related to the subject matter of the instant invention. However, while the MANNES rotor is directed to subject matter similar to that of the instant invention, Applicant notes that MANNES fails to identify the problem sought to be resolved by the instant invention. That is, MANNES fails to provide any teaching or suggestion the undesired wear on the rotor blades the reduces their useful life within the apparatus. Moreover, as SOHMA is not directed to the sorting of a fiber suspension, Applicant notes that SOHMA certainly fails to provide any suggestion of the problems faced by the rotor in the MANNES system, and, therefore, cannot even arguably suggest the solution found by Applicant.

Because neither MANNES nor SOHMA teach or suggest an anti-wear element comprising a base body *coupled to* a wear-resistant working surface, as recited in at least independent claims 1, 15, and 23, no proper combination of these documents can render

unpatentable the combination of features recited in the independent claims. Accordingly, Applicant submits that the instant rejection is improper and should be withdrawn.

Moreover, because none of the art of record provides any teaching or suggestion of the problem addressed by the instant invention, Applicant submits that the art of record cannot even arguably suggest a solution to the problem addressed by the Applicant's invention. Thus, Applicant submits that no proper combination of the applied art can render unpatentable the features recited in at least independent claims 1, 15, and 23.

Further, while acknowledging that the rotor of MANNES is at least related to the subject matter of the instant invention, Applicant submits that the blade of SOHMA is wholly distinct from and utilized in a wholly different environment from that of MANNES. Therefore, even assuming, *arguendo*, that one ordinarily skilled were to identify the wear problem from the disclosure of MANNES, which Applicant submits one would not, the art of record fails to provide any rationale as to why such an individual would refer to art directed to protecting nuclear reactor turbines or subterranean heat generators, which do not speak to protecting rotors in a fiber suspension.

Thus, Applicant submits that art of record fails to provide the requisite motivation or rationale for combining the documents of MANNES and SOHMA in the manner asserted by the Examiner, and that the instant rejection is improper and should be withdrawn.

Further, Applicant submits that claims 3 - 5, 17, and 24 - 28 are allowable at least for

the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that no proper combination of MANNES and SOHMA teaches or suggests, *inter alia*, in combination with a tank of a paper stock processing machine, wherein said rotor is rotatably mounted within said tank to circulate a stock suspension in said tank, as recited in claim 3; said paper stock processing machine is a primary pulper having a horizontally oriented screen, and said rotor is rotatably mounted so that said leading front surface positioned adjacent said screen, as recited in claim 4; said paper stock processing machine is a secondary pulper having a vertically oriented screen, and said rotor is rotatably mounted so that said leading front surface positioned adjacent said screen, as recited in claim 5; in combination with a tank of a paper stock processing machine, wherein the rotor blades are adapted to circulate a stock suspension contained in said tank, as recited in claim 17; said base body is welded to said leading front surface, and said wear-resistant working surface is coupled to said base body, as recited in claim 24; a portion of said anti-wear element is arranged to protrude past said leading front surface, as recited in claim 25; said portion extends past said leading front surface in a direction adapted to face said screen, as recited in claim 26; said tank is a primary pulper tank, as recited in claim 27; said tank is a secondary pulper tank, as recited in claim 28.

Applicant requests that the Examiner reconsider and withdraw the rejection of claims

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3 - 5, 17, and 23 - 28 under 35 U.S.C. § 103(a) and indicate that the claims are allowable.

Application is Allowable

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

The Commissioner is authorized to charge to Deposit Account No. 19 - 0089 any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, in order to maintain pendency of this application.

CONCLUSION

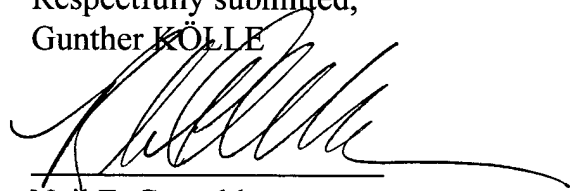
In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 - 28. The claims have been amended to eliminate any arguable basis for rejection under 35 U.S.C. § 112. In addition, the applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art,

should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,
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PA 35.013

July 8, 2003
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